Call for FY 2003
Common High Performance Computing Software Support Initiative (CHSSI)
Project Proposals

Frequently Asked Questions
and
Sample Documentation and Reporting Requirements

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Frequently Asked Questions

Q I don't have a project that fits into any of the advertised portfolios. Can I submit a proposal for my project anyway?

A No. Only projects directly related to the portfolios advertised in this call will be considered.

Q It says that only proposals submitted by Service/Agency representatives with consolidated ratings will be considered for this call. Who is my representative? Do I send the proposal to him or her or to you?

A Each Service/Agency has different instructions. Please follow the instructions pertinent to your organization, below. Note that your due date to your Service/Agency representative may be well in advance of the date the consolidated ratings and proposals are due to the "chssi-team."

Service/ Agency	Special Instructions
Army	Army CHSSI proposals must be emailed to Mr. Donald Morgan at donald.morgan@saalt.army.mil **with copy furnished** to Dr. Michael Barton at bartonj@dtc.army.mil **by close of business July 19, 2002**. Questions regarding this action can be directed to Mr. Morgan at 703-601-1523.
Navy	Proposals must be sent to **two** different **recipients** at **two** different **times**. 1. Electronic copies of proposals must be received by Dr. Peter Reynolds at reynolp@onr.navy.mil **by July 19, 2002**. 2. Electronic copies of proposals must **also** be sent to chssi-team@hpcmo.hpc.mil by 1400 EDT **August 1, 2002**.
Air Force	All Air Force proposals (both S&T and T&E) must be submitted to Maj Ed Williams (Alt S&T Principal) **NLT 15 July 2002**. Contact Maj Williams for further information: Maj Ed Williams, PhD HPC Program Manager, AFOSR/NM 703-696-6566 (DSN 426-6566) edward.williams@afosr.af.mil
DTRA	Contact Ms. Jacqueline Bell at Jacqueline.Bell@dtra.mil for instructions.

Q What is the duration of a CHSSI project?

A The duration of a CHSSI project is three years. We expect that a deliverable will be "fielded" in three years.

Q Is the funding listed ($100,000 - $500,000) for the entire project or per year?

A The funding is per year. Proposers whose projects are selected will be notified of the specific amount approved for their projects when notified of project selection.

Q Are resumes and references included in the 15 page limit.

A No. See paragraph 4c of the selection plan.

Q Do you require signatures from my management with my proposal?

A No. The High Performance Computing Modernization Office (HPCMO) requires a memorandum of commitment you're your management only <u>after</u> proposals have been selected. See paragraph 6 of the selection plan.

Q Will CHSSI fund the development of software for Linux clusters?

A High Performance Computing Modernization Program (HPCMP) systems used for CHSSI-developed software include Linux clusters. Proposals may be submitted for software development efforts that will use an HPCMP Linux system. Please note that software developed under CHSSI must be ported to at least two high performance computing platforms at HPCMP shared resource centers.

Q **We are a little concerned about the overhead and oversight that our organization might be required to supply. Like many, we are rather tight for manpower. In reading the "FY 2003 CHSSI Project Selection Plan", I see that there are requirements for reporting to the HPCMP. How stringent are these requirements?**

A The reporting requirements are very important and must be stringently adhered to. The HPCMO will freeze or terminate funding for any project that has not complied with documentation, oversight, and/or reporting requirements. The requirements are only those necessary for good project management and essential project oversight by the HPCMO. All of the key project management and test plans (e.g., the *Software Development Plan* and the *Test and Evaluation Master Plan Addendum*) have boilerplates for simplicity of incorporating required text. However, the content is important and information is reviewed and approved prior to the start of a project. Additional reporting requirements are monthly financial and quarterly technical and management reports, which also have boilerplate formats.

Please note that you should budget for overhead and oversight in your proposal's funding tables.

Q **What we propose may involve taking Commercial-off-the-Shelf (COTS) software and modifying it. Of course, this would involve cooperation and involvement of the contractor who makes the software. But how feasible is this, and will the end product have to be releasable to all? Would this be as tricky as I think it might be?**

A The use of COTS software may be included in a proposal. However there are many problems dealing with COTS that must be resolved before the proposal is submitted. Work with knowledgeable acquisition personnel to ameliorate known problems involved in COTS modification. Known problems lie in the intellectual property rights of the code in question, and the export control issues associated, as well as distribution rights to the software. There are also problems of invalidating warranties by using COTS and the problem of compatibility of the modifications to future versions of COTS. All of these issues will require much work to mitigate the risks associated with a COTS-related proposal. Ensure that: procedures are incorporated into the contract that require the contractor to review all subcontractor or vendor COTS products; all commercial hardware and software in the system are supportable; license fees and other support and maintenance costs are disclosed; responsibilities are defined for maintaining system compatibility. Data rights may be a concern if a contractor has developed intellectual property independent of the contract. You should ensure you have identified and priced all restricted rights for the software and documentation being modified. In addition, you must ensure compliance with current DoD data standardization policies, including the use of standard data. Specifically, DoD policies require compliance with DoDD 8320.1. Also see http://www.acq.osd.mil/ar/doc/intelprop.pdf, which provides an overview of the current DoD policy concerning intellectual property rights.

Q Can private corporations or academic institutions submit CHSSI proposals?

A No. Proposals must be submitted by DoD government employees (civilian or military). Please see paragraph 4a of the selection plan.

Q Do CHSSI funds only pay for contractors, or can they be used to pay the salary of project team members?

A CHSSI funds can be used to pay for labor and travel of DoD personnel and be placed on contract(s) for personnel to perform the software parallelization.

Q On page 5 of the CHSSI Project Selection Plan, under deliverables, is the requirement:
"Identify two or more DoD HPCMP scalable architectures that will be used to develop scalable implementations of the proposed software. In addition, identify the DoD scalable high performance computing platforms to be used for demonstration and production computations."
I get "computing platforms", but I'm a little unsure about what you want for "scalable architectures". Shared memory versus distributed memory? The dimensionality of the connections between the nodes?

A *Architecture*, in this context is the computer design; the way components fit together (e.g., the way the capability of the system can be scaled up by simply adding additional components). The term is used particularly of processors, both individual and in general; but also applies to other key components, which differentiate the supercomputers extant. For HPCMP-managed hardware at our major shared resource centers (MSRC), go to https://xwww.asc.hpc.mil/cgi-bin/hwbycntr.pl. The divergence of architectures is very apparent on the MSRC hardware page because it lists the operating systems, types of processors, and memory types.

Platform refers to specific computer hardware - one row of the MSRC table would be a platform.

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The following documents are required to be submitted **after** the proposal is selected:

1. Memorandum of Endorsement: A memorandum of endorsement from your laboratory or test center director will be the first post-selection requirement - due within 30 days of selection. A sample memorandum is at the last page of the "FY 2003 Common High Performance Computing Software Support Initiative (CHSSI) Project Selection Plan."

2. Test and Evaluation Master Plan Addendum: This document outlines the key measures and methods for testing the software. The addendum outline sample is shown below.

3. Software Development Plan: This plan extensively documents the management and development processes for the project. A sample of the plan's outline is show below.

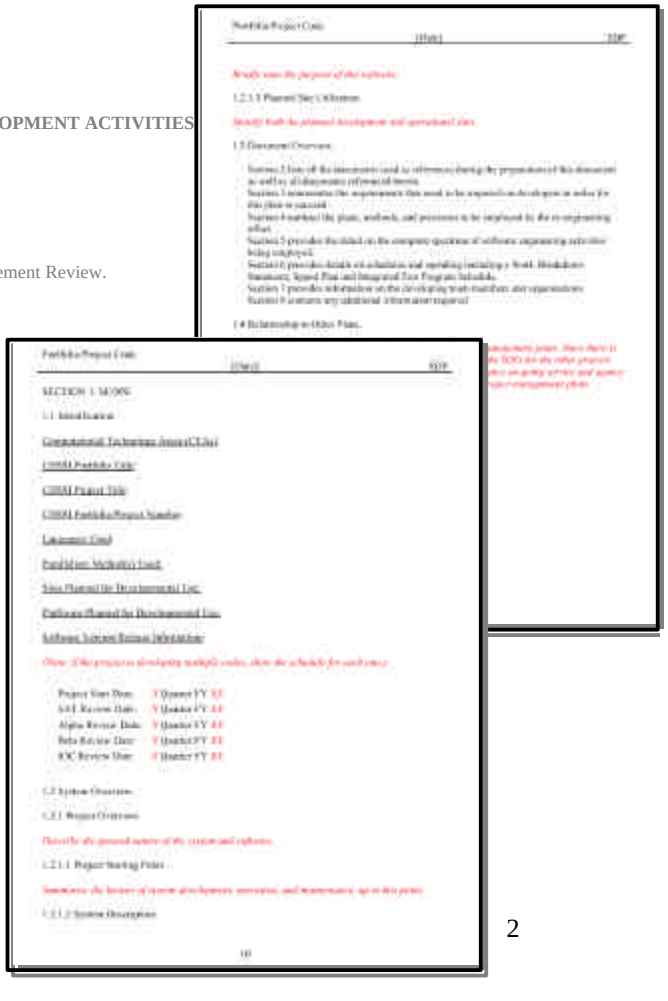
SECTION 1. SCOPE
- 1.1 Identification.
- 1.2 System Overview.
  - 1.2.1 Project Overview.
    - 1.2.1.1 Project Starting Point.
    - 1.2.1.2 System Description.
    - 1.2.1.3 Planned Site Utilization.
- 1.3 Document Overview.
- 1.4 Relationship to Other Plans.

SECTION 2. REFERENCED DOCUMENTS
- 2.1 Government Documents.
  - 2.1.1 Standards.
  - 2.1.2 Other Publications.
- 2.2 Non-Government Documents.
  - 2.2.1 Non-Government Standards.

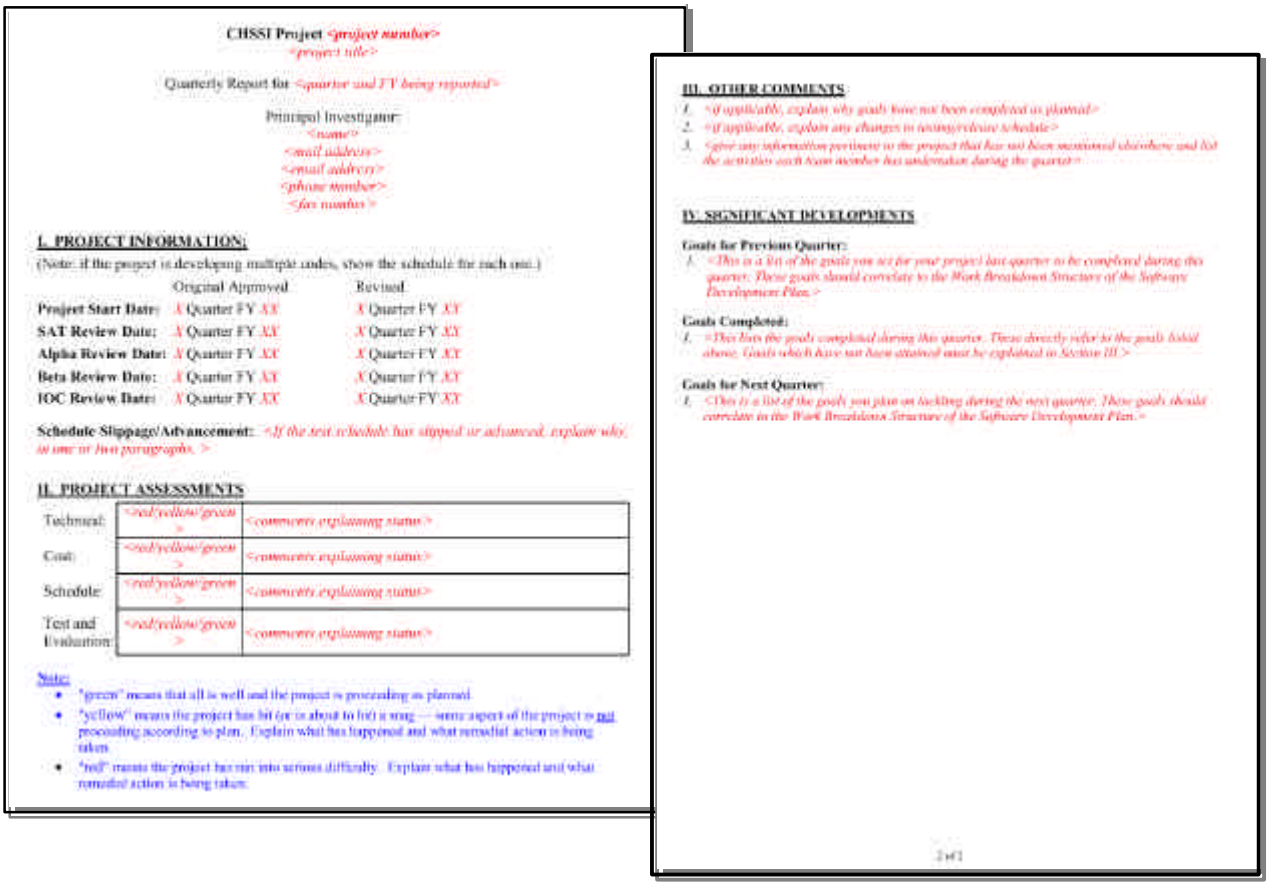
SECTION 3. OVERVIEW OF REQUIRED WORK
- 3.1 Requirements and Constraints on the System and Software to be Developed.
- 3.2 Requirements and Constraints on the Project Documentation. (Not Applicable).
- 3.3 Position of the Project in the System Life Cycle. (Not Applicable).
- 3.4 Selected Program/Acquisition Strategy or Any Requirements or Constraints.
- 3.5 Requirements and Constraints on the Projected Schedules and Resources.
- 3.6 Other Requirements and Constraints, such as Project Security, Privacy, Methods, Standards, Interdependencies in Hardware and Software Development, Etc.
  - 3.6.1 Software Release Limitations Including Export Control Issues.
  - 3.6.2 Intellectual Property Rights.
  - 3.6.3 Release Procedures.

SECTION 4. PLANS FOR PERFORMING GENERAL SOFTWARE DEVELOPMENT ACTIVITIES
- 4.1 Software Development Process.
- 4.2 General Plans for Software Development.
  - 4.2.1 Software Development Method.
  - 4.2.2 Standards for Software Products.
  - 4.2.3 Reusable Software Products.
  - 4.2.4 Handling of Critical Requirements.
  - 4.2.5 Computer Hardware Resource Utilization.
  - 4.2.6 Recording Rationale.
  - 4.2.7 Access for Acquirer Review.

SECTION 5. PLANS FOR PERFORMING DETAILED SOFTWARE DEVELOPMENT ACTIVITIES
- 5.1 Project Planning and Oversight.
  - 5.1.1 Software Development Planning (Covering Updates to This Plan).
  - 5.1.2 CSCI Test Planning. (Not Applicable).
  - 5.1.3 System Test Planning.
  - 5.1.4 Software Installation Planning.
  - 5.1.5 Software Transition Planning.
  - 5.1.6 Following and Updating Plans, Including the Intervals for Management Review.
- 5.2 Establishing a Software Development Environment.
  - 5.2.1 Software Engineering Environment.
  - 5.2.2 Software Test Environment.
  - 5.2.3 Software Development Library. (Not Applicable).
  - 5.2.4 Software Development Files. (Not Applicable).
  - 5.2.5 Non-Deliverable Software. (Not Applicable).
- 5.3 System Requirements Analysis.
  - 5.3.1 Analysis of User Input.
  - 5.3.2 Operational Concept.
  - 5.3.3 System Requirements.
- 5.4 System Design.
  - 5.4.1 System-Wide Design Decisions.
  - 5.4.2 System Architectural Design. (Not Applicable).
- 5.5 Software Requirement Analysis.
- 5.6 Software Design.
  - 5.6.1 CSCI-Wide Design Decisions. (Not Applicable).
  - 5.6.2 CSCI Architectural Design. (Not Applicable).
  - 5.6.3 CSCI Detailed Design. (Not Applicable).
- 5.7 Software Implementation and Unit Testing.
  - 5.7.1 Software Implementation.
  - 5.7.2 Preparing for Unit Testing.
  - 5.7.3 Performing Unit Testing.
  - 5.7.4 Revision and Retesting.
  - 5.7.5 Analyzing and Recording Unit Test Results.
- 5.8 Unit Integration and Testing.
  - 5.8.1 Preparing for Unit Integration and Testing.
  - 5.8.2 Performing Unit Integration and Testing.
  - 5.8.3 Revision and Retesting.
  - 5.8.4 Analyzing and Recording Unit Integration and Test Results.



4. Quarterly Report: These reports are synopses of key activities programmed and accomplished during the preceding fiscal quarter. They provide HPCMP management with a snapshot of the project's progress. Quarterly reports are due the 15th of the month following each federal fiscal quarter. That is, January 15th for 1st quarter reports covering October, November and December; April 15th for 2nd quarter reports covering January, February and March, and so on. Here is a picture of the current format for project quarterly reports.



CHSSI Project *<project number>*
<project title>

Quarterly Report for *<quarter and FY being reported>*

Principal Investigator:
<name>
<email address>
<email address>
<phone number>
<fax number>

I. PROJECT INFORMATION:

(Note: if the project is developing multiple codes, show the schedule for each one.)

	Original Approved	Revised
Project Start Date:	*X* Quarter FY *XX*	*X* Quarter FY *XX*
SAT Review Date:	*X* Quarter FY *XX*	*X* Quarter FY *XX*
Alpha Review Date:	*X* Quarter FY *XX*	*X* Quarter FY *XX*
Beta Review Date:	*X* Quarter FY *XX*	*X* Quarter FY *XX*
IOC Review Date:	*X* Quarter FY *XX*	*X* Quarter FY *XX*

Schedule Slippage/Advancement: *<If the test schedule has slipped or advanced, explain why, in one or two paragraphs. >*

II. PROJECT ASSESSMENTS

Technical:	*<red/yellow/green >*	*<comments explaining status>*
Cost:	*<red/yellow/green >*	*<comments explaining status>*
Schedule:	*<red/yellow/green >*	*<comments explaining status>*
Test and Evaluation:	*<red/yellow/green >*	*<comments explaining status>*

Note:
- "green" means that all is well and the project is proceeding as planned.
- "yellow" means the project has hit (or is about to hit) a snag — some aspect of the project is not proceeding according to plan. Explain what has happened and what remedial action is being taken.
- "red" means the project has run into serious difficulty. Explain what has happened and what remedial action is being taken.

III. OTHER COMMENTS

1. *<If applicable, explain why goals have not been completed as planned>*
2. *<If applicable, explain any changes to existing release schedule>*
3. *<give any information pertinent to the project that has not been mentioned elsewhere and list the activities each team member has undertaken during the quarter>*

IV. SIGNIFICANT DEVELOPMENTS

Goals for Previous Quarter:

1. *<This is a list of the goals you set for your project last quarter to be completed during this quarter. These goals should correlate to the Work Breakdown Structure of the Software Development Plan.>*

Goals Completed:

1. *<This lists the goals completed during this quarter. These directly refer to the goals listed above. Goals which have not been attained must be explained in Section III.>*

Goals for Next Quarter:

1. *<This is a list of the goals you plan on tackling during the next quarter. These goals should correlate to the Work Breakdown Structure of the Software Development Plan.>*

5. Financial Management Report: This simple spreadsheet is due each <u>month</u> and provides a synopsis of obligations and expenditures –cumulatively, including those incurred the preceding month. The financial management reports are due the 15th of every month. The HPCMO will provide the spreadsheet template to be filled out and returned to the HPCMO.

Definitions

Obligations. An obligation occurs when an obligating official (like a contracting officer) makes an award (like a contract) to an entity (person, firm, university) on behalf of a DoD organization, thereby obligating that organization to fund the work done in compliance with the awarding document.

Expenditures. Depending on your point of view....Expenditures are actual payments TO the contracted entity AND they are disbursements of funds FROM the DoD agency.

6. Testing Program: Throughout the progression of the software development effort, the software will be required to undergo a series of tests. Each project will undergo a software acceptance test, alpha test, beta test, and initial operational capability test. Test plans/scenarios and test reports will be required for each test. Again, guidance and templates will be provided to the project leads by the HPCMO.